

Veterinary experiences of a Johne's disease control programme in Ireland

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Introduction

Paratuberculosis, or Johne's disease (JD), is a serious condition of cattle and sheep and can negatively impact herd health and farm productivity. The private veterinary practitioner (PVP) is considered an important source of information for farmers on disease control generally.¹⁻³ Although herd PVPs may actively engage with their clients on JD control strategies, the effectiveness of this engagement and the potential for compliance with control measures can be undermined by a lack of PVP training and confidence in specific JD epidemiology.^{4,5} A number of countries including Canada, the UK and the Netherlands currently have JD control programmes that involve PVP training and direct farmer engagement, and in which on-farm risk assessment forms a central component.⁶ There is considerable heterogeneity between these programmes.⁶ Nevertheless, where a formal control programme is in place, it is essential that a herd's PVP supports its aims and the approach taken, recognises the necessity of acting on risk-assessment outcomes and is capable of communicating and articulating management recommendations to the farmer.⁷ (Sorge and others 2010)

In October 2013, Animal Health Ireland (AHI) initiated a JD Pilot Dairy Control Programme that ran until December 2016. The Pilot programme comprised herd screening, annual on-farm risk assessments conducted by an approved PVP leading to an agreed management plan and the future development of a framework to enable herd categorisation which either (1) quantified the level of confidence that any given

herd participating in the programme with negative test results was truly free of infection or (2) reflected the level of infection in infected herds.^{8,9}

The overarching aim of this Pilot Programme was to test, evaluate and refine the various programme components, including data handling, diagnostic and on-farm advisory elements that would be required to support a future, extended JD control programme in Ireland. It was assumed at the beginning of the pilot programme that a future programme would have three main goals (Box 1).

A detailed discussion on the development of the pilot programme and its impact on farmers is contained in Devitt *et al.*¹⁰ As part of the development process, an extensive training programme was undertaken to ensure PVPs were made aware of current JD control practices, could provide practical advice to farmers using evidenced-based science and were trained in the delivery and development of on-farm veterinary risk assessment and management plans (VRAMPs). The VRAMP training programme aimed to assist PVPs carry out veterinary on-farm risk assessments and management planning by providing current information about JD and the importance of biosecurity in preventing and controlling JD, and the role of testing to identify high-risk animals. The training programme encompassed JD and the principles of infection diagnosis and control; the provision of farm-specific advice on JD control; and the delivery of on-farm risk assessments and management planning for JD. The method of delivery comprised classroom work with practical on-farm risk assessments and group discussion of scenarios commonly experienced on Irish dairy herds.

PVPs who completed this training were termed approved veterinary practitioners (AVPs) and were funded by the Department of Agriculture, Food and the Marine (DAFM) to deliver VRAMPs in participating herds according to a standard operating procedure. As part of a review of the pilot programme, a web-based survey was conducted in 2016 to capture the experiences of the 494 PVPs trained as AVPs. An eight-week period

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BOX 1: Goals for a future Johne's disease (JD) control programme

In herds without confirmed evidence of infection

- Identify herds that test negative for JD. Provide farmers with knowledge and support to allow them to increase their confidence over time of being free of infection and to protect their herds from the risk of disease (focus on bioexclusion).

In known infected herds

- Provide herds identified by the programme, or otherwise, as being infected, with the knowledge and support to allow them to control and reduce the prevalence of the disease over time and to achieve a high confidence of disease freedom (focus on biocontainment).

Market reassurance

- Underpin the quality of Irish dairy and beef produce in the international marketplace.

was allocated for survey completion and a final response rate of 27 per cent (n=131) was achieved. SPSS (Statistical Package for the Social Sciences) was used to generate descriptive data and conduct tests of significance (P<0.05). A copy of the full survey is available on request.

Respondents had practised for an average of 20.6 years (range: 1 to 51 years). Most (76%) represented mixed (large and small animals) practice, followed by 14 per cent in large animal (mixed species) practices and 10 per cent in bovine practice only.

Although respondents carried out some activities related to the diagnosis of JD before joining the programme, less popular activities included discussing management strategies with clients and recommending the control programme to farmers. This may be explained by time constraints, or because of an historic emphasis on testing to control endemic disease, rather than disease prevention through risk assessment.

Reasons for participating in the programme were mostly client-centred and professional development-centred. Over 75 per cent engaged with the programme because they wanted to work with clients on controlling and eradicating JD at the herd level. Over 50 per cent wanted to continue professional development, develop disease advisory services, avail of the financial supports available for participation through DAFM funding for delivery of VRAMPs, or find out more about the causes and prevention of JD. Similar to results from other studies (Sorge and others 2010), the training provided to PVPs before undertaking VRAMPs and whole-herd testing had a positive impact on respondent knowledge (Table 1), with a significant difference in the rating of knowledge before joining the programme (only 20 per cent rated their knowledge as excellent), and following the receipt of training. Post-training workshop evaluation indicated that PVPs perceived favourably the opportunity to update their understanding of risk identification management through the combination of theory and practical sessions, and

TABLE 1: Summary of PVP experiences of training in preparing them for participation in the pilot programme (n=131)

Perceived helpfulness of the Johne's Disease Control Programme training programme in	Very helpful	Helpful	Not very helpful
Preparing you to work in partnership with your clients on herd-health planning for JD control (n=128)	76 (59%)	45 (35%)	7 (6%)
Preparing you for the delivery of on-farm risk assessments and management planning for JD (n=130)	88 (68%)	41 (32%)	1 (1%)
Informing you about JD and the principles of infection diagnosis and control (n=131)	90 (69%)	39 (29%)	2 (2%)
Preparing you for the provision of farm-specific advice on JD control (n=129)	91 (71%)	35 (27%)	3 (2%)
Perceptions on outcomes arising from the risk assessment process	Agree	Neutral	Disagree
Encouraged my clients to discuss different options for controlling JD (n=110)	88 (80%)	20 (18%)	2 (2%)
Correctly captured the risk for JD on my clients' farms (n=110)	88 (80%)	22 (20%)	0
Was useful to my clients in their efforts to control JD (n=110)	89 (81%)	21 (19%)	0
Helped my clients understand infection risk specific to their herds (n=110)	95 (86%)	14 (13%)	1 (1%)
Correctly identified problem areas on my clients' farms (n=110)	96 (87%)	13 (12%)	1 (1%)
Increased my knowledge of management practices on my clients' farms (n=110)	96 (87%)	11 (10%)	3 (3%)
Improved my clients' ability to prevent or control other diseases on their farms (n=110)	98 (89%)	10 (9%)	2 (2%)

JD, Johne's disease; PVP, private veterinary practitioner.

the opportunity afforded by the workshop format to discuss and share experiences and solve problems in a collegiate environment. Respondents who had positive perceptions towards training were more likely to recommend training to their colleagues (P<0.001). Further training was cited as important: 96 per cent reported they would like additional training, and in line with results from Sorge and others (2010), most cited every two years to four years as the preferred training interval.

Generally, respondents were very positive about the improved level of understanding and the changes to management practices that the risk assessment process engendered in their clients (Box 1). Many of those respondents who responded neutrally regarding the risk assessment process had not delivered a VRAMP before completing the survey (n=15 from a total of n=19). Very few participants had undertaken any other form of risk assessment for other animal health issues on clients' farms. According to Sorge and others (2010), failure to complete JD-specific risk assessments as a methodology may relate to non-engagement from the client, or failure by the client to recognise the seriousness of the disease, or the benefits of disease eradication. It may also suggest gaps in understanding and skills among veterinary practitioners, regarding the risk assessment process and preventative disease plans. Commenting on the financial payment received for risk assessment, respondents emphasised the importance of prompt payment, and the need to cover the less obvious costs

involved in the assessment process, such as the time involved in engaging and motivating farmers. McAloon *et al*³ recommend that veterinary advisors develop collaborative and innovative ways to work with farmers – therefore, it is important that they feel valued for this work.

Farmer willingness is necessary for the implementation of agreed biosecurity measures.¹ When asked how the risks assessment process could be improved for farmers, respondents recommended the need to incentivise farmers, to build farmer capacity through education, and to recommend control measures that were practical and time-efficient for farmers to implement. Notably, this last recommendation reflects the international literature on why farmers often fail to implement disease control measures.^{3 11} Specific recommendations for improving the risk assessment for PVPs focused on assessment questions and scoring.

More than one source of information was considered helpful by PVPs when communicating information on JD control and the programme. While farmers typically favoured the farming press and discussion-based scenarios for improving awareness about JD,¹⁰ the most popular option for PVPs were tutorials/seminars followed by discussion-based scenarios. Respondents identified tutorials from an expert, and peer-to-peer sessions as the preferred source of information for further increasing knowledge on JD and its control. In addition to improving non-financial programme supports from AHI, providing financial supports, making management options practical to implement, improving farmer awareness, and generating industry support and incentives for farmers and PVPs were cited as necessary to promoting both farmer and PVP participation.

Conclusion

The weight attached to working with clients on controlling and eradicating JD as a reason for participating in the programme is a positive result in this study. Ongoing training, capacity building and technical support were also ranked highly by PVPs. Survey results proved beneficial in generating insights which assisted the framing of the Irish Johne's Control Programme (IJCP), a voluntary national programme launched in September 2017. This social science review allowed AHI to investigate

the non-scientific components of the pilot programme, helping stakeholders understand and identify how the programme can be refined and improved. IJCP incorporates knowledge and experience gained from the pilot programme, a review of international best practice and extensive consultation with stakeholders and includes an extensive awareness-raising programme of farmer workshops, expansion of advisory materials and a greater emphasis on farm biosecurity.

As survey responses were generally homogeneous and positive, it is likely that PVPs responded because they had a keen interest in promoting the programme. While their views may differ from other less enthusiastic practitioners across Ireland, this cohort of PVPs may continue to be active in the programme.

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